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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GURSHMAN, GRIGORY

ART UNIT PAPER NUMBER

2132

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/676,838

Applicant(s)

KARMOUCH ET AL.

Examiner

Grigory Gurshman

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's amendment of claim 2 merely corrects a typographical error.
2. Referring to claims 1-4 Applicant argues that the following claim elements are missing from the cited references: the virtual network communication system, the coordinator manager, shared tuple space. Examiner points out that all of these elements are met by Makarios in the following manner:

The limitation "a shared tuple space for effecting inter site communications between the different sites" is met by an information space constructed to span a group of one or more server systems. The information space is based on the tuple-space paradigm (see abstract). The "Coordinator manager within each of the sites for receiving user initiated requests from the Private Tuple Space to communicate between user agents at the different sites" is met by a coordination entity configured to provide storage location information of a tuple stored on a first server to a second server over the computer network in response to a request for the storage location information of the tuple (see column 5, lines 1-12).

3. Regarding claims 1-4, Applicant argues a number of the features allegedly not taught by the prior art. Examiner points out that none of the alleged features are reflected in the claims 1-4. Claim 2 is addressed in the rejections below per Applicant's request.

4. Referring to claims 5-9, Applicant also argues a number of the features allegedly not taught by the prior art. Examiner points out that none of the alleged features are reflected in the claims 5-9. In particular it is not clear that the "shared tuple space" of claim 6 is distinct from the one taught by Makarios.

5. Applicant further argues that the obviousness rejection is improper because the references cited are from non-analogous art. In response to applicant's argument that Makarios and Beser is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Makarios discloses a tuple space-based coordination mechanism (see abstract). Makarios teaches an information space constructed to span a group of one or more server systems. The information space is based on the tuple-space paradigm. A coordination entity manages storage of tuples within the information space. Beser shows a private network (see Fig.1). Beser teaches that a cable modem termination system (i.e. Coordinator) receives the registration request message and uses the message integrity check value to authenticate the message (see abstract). Therefore, Beser discloses the invention in the same field of managing computers connected into the network.

6. In view of reasons presented herein, the rejections of claims 1-15 are maintained

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1- 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makarios (U.S. Patent No. 6,553,402 B1) in view of Beser (U.S. Patent No. 6,170,061 B1).

9. Referring to the instant claims, Makarios discloses a tuple space-based coordination mechanism (see abstract). Makarios teaches an information space constructed to span a group of one or more server systems. The information space is based on the tuple-space paradigm. A coordination entity manages storage of tuples within the information space. Applications access tuples by consulting a local cache of known tuple locations. If the location of a tuple is known, access is directed to the known location. If the location is unknown, the coordination is queried to determine the correct tuple location. If a tuple has moved, the previously storing server generates a re-route exception. This causes the accessing application to query the coordination entity, retry the access, and update the local cache (see abstract and Fig.2).

Makarios claims the method for information exchange and persistence, the method comprising the steps of: providing an information space distributed across multiple servers on a computer network for the distributed storage of tuples across the multiple

servers; and providing a coordination entity, the coordination entity configured to provide storage location information of a tuple stored on a first server to a second server over the computer network in response to a request for the storage location information of the tuple (see column 5, lines 1-12).

10. Referring to claim 1, the network is shown in Fig.1. The limitation "Private Tuple Space within each of the sites for effecting intra-site communications between agents at each of the sites" is met by memory (204 and 214 in Fig.2), where tuples are stored. The limitation "a shared tuple space for effecting inter site communications between the different sites" is met by an information space constructed to span a group of one or more server systems. The information space is based on the tuple-space paradigm (see abstract). The "Coordinator manager within each of the sites for receiving user initiated requests from the Private Tuple Space to communicate between user agents at the different sites" is met by a coordination entity configured to provide storage location information of a tuple stored on a first server to a second server over the computer network in response to a request for the storage location information of the tuple (see column 5, lines 1-12). While Makarios teaches exchanging tuples between different sites, he does not teach authentication of the user requests prior to exchanging the tuples.

11. Referring to the instant claims, Beser shows a private network (see Fig.1). Beser teaches that a cable modem termination system (i.e. Coordinator) receives the registration request message and uses the message integrity check value to authenticate the message (see abstract). Beser also teaches multiple encodings within

a single message. There is at least one SPD 74 in TCD message 70. The parameters are encoded as SPD-TLV tuples (see column 10, lines 20-30), which meets the limitation "embedded messages".

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to exchange tuples between different sites Makarios and have the communication request authenticated prior to transmission of messages embedded into tuples as taught in Beser. One of ordinary skill in the art would have been motivated to exchange tuples between different sites and have the communication request authenticated prior to transmission of messages embedded into tuples as taught in Beser for improved security for registering cable modems (see Beser, abstract).

12. Referring to claim 2, Makarios teaches a coordination entity configured to provide storage location information of a tuple stored on a first server to a second server over the computer network in response to a request for the storage location information of the tuple (see column 5, lines 1-12).

13. Referring to claim 3, the "Data Repository" is met by memory (see unit 204 in Fig.2).

14. Referring to claim 4, Beser teaches the use of user identifiers (see abstract). Therefore, one of ordinary skill in the art would have been motivate to use the IDs of agents as taught in Beser for identifying the users (see Beser, abstract).

15. Claims 5 - 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makarios (U.S. Patent No. 6,502,134 B1) in view of Beser (U.S. Patent No. 6,170,061 B1) and further in view of Brickell (U.S. Patent No. 4,845,749).

16. Referring to the instant claims, Makarios discloses a tuple-based information space for data exchange between applications (see abstract). Makarios teaches an information space constructed to span a group of one or more server systems. The information space is based on the tuple-space paradigm. A coordination entity manages storage of tuples within the information space. Applications access tuples by consulting a local cache of known tuple locations. If the location of a tuple is known, access is directed to the known location. If the location is unknown, the coordination is queried to determine the correct tuple location. If a tuple has moved, the previously storing server generates a re-route exception. This causes the accessing application to query the coordination entity, retry the access, and update the local cache (see abstract).

Makarios claims the method for information exchange and persistence, the method comprising the steps of: providing an information space distributed across multiple servers on a computer network for the distributed storage of tuples across the multiple servers; and providing a coordination entity, the coordination entity configured to provide storage location information of a tuple stored on a first server to a second server over the computer network in response to a request for the storage location information of the tuple (see column 5, lines 1-12). Referring to the instant claims, Beser shows a private network (see Fig. 1). Beser teaches that a cable modem termination system (i.e. Coordinator) receives the registration request message and uses the message integrity



check value to authenticate the message (see abstract). Beser also teaches multiple encodings within a single message. There is at least one SPD 74 in TCD message 70. The parameters are encoded as SPD-TLV tuples (see column 10, lines 20-30), which meets the limitation "embedded messages".

Makarios and Beser teach exchanging the tuples over the shared tuple space between different sites. Makarios and Beser also teach authenticating the user requests for communication and embedding the messages into tuples. Makarios and Beser, however do not teach encrypting and decrypting the tuples with the key.

17. Referring to the instant claims, Brickell discloses a secure teleconferencing system (see abstract). Brickell teaches that the secure teleconferencing system comprises a centralized facility or bridge to which a plurality of participants is connected (see abstract), which meets the "Shared Tuple Space between the sites". According to Brickell, the role of the bridge is to receive encrypted message signals from the participants and to add the encrypted message signals, modulo some known number. The result is then transmitted to the participants. Each participant is able to decrypt the modular sum of encrypted message signals, to obtain the desired ordinary sum of clear text message signals. Brickell teaches that the contents of the cell transmitted via line 99 to the main processor is a tuple of the form (t, b, count) where count is the number of encrypted messages already summed, and b- is the partial modular summation of the encrypted messages (see column 6, lines 60-65).

Therefore, at the time the invention was made, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to exchange the messages

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embedded in tuples of Makarios and Beser and encrypt the tuples encrypt the tuples prior to the transmission as taught in Brickell. One of ordinary skill in the art would have been motivated to exchange the messages embedded in tuples and encrypt the tuples prior to the transmission as taught in Brickell for improving the security of teleconferencing system in such a way that no clear text messages are present at the bridge (i.e. shared space) –see Brickell (column 1, lines 10-40).

18. Referring to claims 7 and 9, it is well known in the art to use the hash values of one key for creating another key. One of ordinary skill in the art would have been motivated to use hash values of an encryption key for creating another encryption key for reducing the computational overhead in generating the key.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Grigory Gurshman whose telephone number is (571)272-3803. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571)272-3799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Grigory Gurshman  
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